

**REMARKS**

Claims 1-3, 5-52 are pending in this application. Claims 1, 8, 12, 37, 38, 39, 40, 41, 43, 44, 46, 47 and 48 are independent. Claim 52 is new.

**Claim Rejection – 35 USC 103; Macdonald, Ackermann, and Goodson**

Claims 16, 27, 28, 31, 35, 43, and 44 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Macdonald, Ackermann, and Goodson. Applicants respectfully traverse this rejection.

**This rejection is unclear.** In the body of the rejection, Tanishima is argued as well in rejecting each of the claims. Specifically, it is unclear whether Tanishima is applied as an alternative to Goodson, whether the rejection should have been based on the combination of Macdonald, Ackermann, Tanishima, and Goodson, or whether Tanishima was incorporated into the rejection in error.

**Thus, Applicants respectfully request that a new Office Action be issued presenting a clear rejection of claims 16, 27, 28, 31, 35, 43 and 44.**

Otherwise, Applicants submit that elements recited in the various claims are argued with respect to other claims. For example, claims 16, 27, 28, 31, and 35, as well as claim 50, depend from claim 12. Thus, the arguments with respect to claim 12 apply as well to claims 16, 27, 28, 31, 35 and 50. Claims 43 and 44 recite a connection unit and power

receptor circuit as part of a receiver unit, comparable to that recited in claim 12. Thus, arguments with respect to those elements in claim 12, apply as well to claims 43 and 44. The same can be said with respect to claim 45 which depends from claim 44. Furthermore, claims 49 and 51 depend from claims 48 and 40, respectfully. Thus, arguments with respect to claims 48 and 40 apply as well to claims 49 and 51, respectfully.

**Claim Rejection – 35 USC 103; Macdonald and Ackermann**

Claims 12-15, 17, 18, 26, 29, 30, 32, 33, 34, 36-39, 41, 42, 46, 47, and 48 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Macdonald et al. (U.S. Patent 5,835,128 “Macdonald”) in view of Ackermann et al. (U.S. Patent 6,137,280 “Ackermann”). Applicants respectfully traverse this rejection.

Claim 12 is directed to a millimeter wave receiver for performing millimeter wave radio transmission indoors comprising, among other things, a millimeter wave receiving circuit receiving, a broadcast wave demodulation circuit, a connection unit connectable with a connector provided on an electronic apparatus having a function of receiving broadcasting, and a power receptor circuit receiving driving power of said millimeter wave receiver through said connection unit.

Thus, at the claimed connection unit, broadcasting flows to the electronic apparatus (which receives the broadcasting at a connector),

and driving power flows to the millimeter wave receiver (power receptor circuit receiving driving power). In other words, at the claimed connection unit, power is transferred in one direction and broadcasting is transferred in the opposite direction.

The Office Action admits that Macdonald fails to teach a connector provided on the IRD or Set-top box 110. Instead, Ackermann is relied on for its teaching of connectors (particularly, female connectors which can be mated to male connectors to connect a DC source at a control unit).

However, Ackermann merely teaches a female connector and male connector for a one-way transfer of power. Thus, Ackermann fails to make up for the deficiency of Macdonald of failing to teach a connector provided on an electronic apparatus having a function of receiving broadcasting as well as providing driving power to a power receptor circuit of a millimeter wave receiver.

In order to further emphasize this distinction, claim 12 has been amended to also recite that the driving power is received through the connection circuit "in superposition with said broadcasting waves". Applicants submit that Macdonald and Ackermann, either alone or in combination, fails to teach at least this claimed feature.

Claim 37 recites a comparable feature to that in claim 12, but from the perspective of the electronic apparatus. In particular, claim 37 recites a power supply circuit supplying driving power of said millimeter wave receiver through the connector (connector connected with the millimeter

wave receiver), and the power supply circuit supplies the driving power through the connector when a channel utilizing the output signal from the millimeter wave receiver is selected.

The Office Action states that connection line 112 is a connection that connects RU 100 to IRD 110 and also to a TV set having a function of receiving broadcasting. The Office Action further states that the IRD 110 includes a power supply circuit that drives an input signal to RU 100 to control the RU 100 to select a frequency band containing the desired television signal.

The Office Action admits that Macdonald fails to teach a connector connected to the RU 100. Instead the Office Action relies on Ackermann's teaching of female connectors which can be mated on output male connectors connecting a DC source.

However, Ackermann merely teaches a female connector and male connector for a one-way transfer of power. Thus, Ackermann fails to make up for the deficiency of Macdonald of failing to teach a connector provided on an electronic apparatus supplying driving power when a channel utilizing an output signal from the millimeter wave receiver is selected.

Claim 38 recites a comparable feature to that in claim 12, but from the perspective of the electronic apparatus. In particular, claim 38 recites an electronic apparatus comprising a connector connected with the millimeter wave receiver and a control signal transmission circuit

transmitting a control signal indicating information provided in the electronic apparatus to the connector.

Ackermann is again applied for teaching the claimed connector. However, because Ackermann merely teaches connectors for one-way transfer of power, Applicants submit that Ackermann does not make up for the deficiency in Macdonald of failing to teach a control signal transmission circuit transmitting a control signal "to said connector".

The same argument as above for claim 38, applies as well to claim 39.

Claim 41 is directed to a repeater connected to an antenna receiving broadcasting for making a relay to a terminal comprising, among other things, a power supply circuit supplying power to the antenna, a connection unit for connection with said terminal, and power receptor circuit receiving driving power of the repeater through the connection unit. In other words, the connection unit connected to the terminal passes broadcasting to the terminal and passes driving power to the repeater.

The Office Action admits that Macdonald fails to teach a connector provided on the IRD or Set-top box 110. Instead, Ackermann is relied on for its teaching of connectors (particularly, female connectors which can be mated to male connectors to connect a DC source at a control unit).

However, Ackermann merely teaches a female connector and male connector for a one-way transfer of power. Thus, Ackermann fails to

make up for the deficiency of Macdonald of failing to teach a connection unit connected with the terminal for making a relay of broadcasting to a terminal.

Claim 46 is directed to a millimeter wave transmitter for performing millimeter wave radio transmission indoors comprising, among other things, a connection unit connectable with an antenna receiving a plurality of broadcasting waves and a power supply circuit supplying driving power to said antenna through said connection unit. Claims 47 and 48 are also directed to a millimeter wave transmitter for performing millimeter wave radio transmission indoors.

The Office Action states that Macdonald further teaches that television signal receiver 13 may be mounted on a wall, window to transmit 60 GHz signals to RU 100 units mounted on IRD 110 and also a TV set. Applicants disagree.

The television signal receiver 13 of Macdonald includes a main receiving antenna 14 and is disposed on the roof of the multiple dwelling unit 10 (column 4, lines 32-35). The television signal receiver broadcasts to receiver units, or provides intermediate frequency signals to transmitters 20, 22, 24, and 26 to be transmitted to receiver units (column 4, lines 38 to 67; column 8, lines 34 to 37). Antennas associated with transmitters 20, 22, 24, and 26 propagate signals along an exterior wall of the MDU (column 4, lines 55-67). The receive antennas, e.g., 32, 34, and 36, may be placed at any convenient location within the MDU

10, which may include a window sill, or alternatively, at an inner surface of a wall or window (column 5, lines 7 to 17).

In other words, Macdonald teaches that receive antennas may be mounted on a wall or window, and not transmitters as relied on in the rejection. Thus, Applicants submit that Macdonald fails to teach at least the claimed millimeter wave transmitter for performing millimeter wave radio transmission indoors of claims 46, 47, and 48.

The arguments above for the independent claims apply as well to the dependent claims. Accordingly, Applicants respectfully request that the rejection be withdrawn.

**Claim Rejection – 35 USC 103; Macdonald and Tanishima**

Claims 1-3 and 5-11 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Macdonald et al. in view of Tanishima (U.S. Patent 5,953,045). Applicants respectfully traverse this rejection.

Claim 1 is directed to a millimeter wave transmitter for performing millimeter wave radio transmission indoors comprising, among other things, a frequency arranging circuit temporarily converting a radio frequency band of terrestrial waves to an intermediate frequency band, thereby changing the frequency arrangement of the broadcasting signals.

The Office Action states that the claimed frequency arranging circuit is met by mixer 70 and local oscillator 72 of Macdonald, and that the mixer 70 and local oscillator 72 temporarily converts the RF signal of

antenna 69 "terrestrial waves" to a higher intermediate frequency band, thereby changing the frequency arrangement of the broadcasting signals.

Applicants disagree.

Macdonald discloses that the function of mixer 70 is to translate the L-band signal, included the inserted signal, to a higher intermediate frequency. In other words, the arrangement of the frequency signals remains the same. In order to clarify this distinction, claim 1 has been amended to recite that the "terrestrial waves below a frequency band of other of said broadcasting signals" are converted to "an intermediate frequency band above said other broadcasting signals".

Claim 8 is directed to a millimeter wave transmitter for performing millimeter wave radio transmission indoors comprising, among other things, a receiving circuit receiving an external control signal and controlling a power supply to supply power to an antenna.

The Office Action admits that Macdonald as modified by Tanishima fails to explicitly teach a receiving circuit that receives an external control signal to control a power supply, to supply power to an antenna. The Office Action goes on to state that, "However, Macdonald further teaches 60 GHz Receiver Unit 100 (fig. 3 and col. 8, lines 50-57) that is coupled to an IRD or Set-top box 110, where an external control signal from a user, controls a power supply "DC signal delivered from IRD or STB 110" to supply power to Antenna 36 via line 112 (fig. 3 and col. 9, lines 15-26). Applicants disagree.



Macdonald merely discloses supplying a DC signal from the IRD 110 to the low noise block 108 through line 112 causing it to switch between first and second bands. Thus, the DC signal has no relation to controlling a power supply to the antenna 36.

The arguments above for the independent claims apply as well to the dependent claims. Accordingly, Applicants respectfully request that the rejection be withdrawn.

**Claim Rejection – 35 USC 103; Macdonald and Goodson**

Claim 40 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Macdonald et al. in view of Goodson et al. (U.S. Patent 5,636,244 “Goodson”). Applicants respectfully traverse this rejection.

Claim 40 is directed to an electronic apparatus having a function of receiving television broadcasting comprising, among other things, an inverse frequency arranger changing the frequency arrangement of output signals of said broadcasting wave demodulation circuit and a transmission circuit transmitting a control signal for controlling the millimeter wave transmitter.

The Office Action admits that Macdonald fails to specifically teach an inverse frequency arranger, and a transmission circuit transmitting a control signal for controlling the transmitting antenna. Instead, the Office Action relies on Goodson for its teaching of a communications device such as a modem having an inverse frequency translator for

inversely translating frequency received. In order to establish a motivation to combine Macdonald and Goodson, the Office Action states that, "it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Goodson into the system of [Macdonald] to provide an inverse frequency translator to inversely translate frequencies received to compensate for resonance and other undesirable distortion.

Applicants direct the Examiner's attention to two recent cases decided by the Court of Appeals for the Federal Circuit (CAFC), In re Dembiczak, 50 USPQ2d 1614 (Fed.Cir. 1999) and In re Kotzab, 55 USPQ2d 1313 (Fed.Cir. 2000). Both of these cases set forth very rigorous requirements for establishing a prima facie case of obviousness under 35 U.S.C. §103(a).

To establish obviousness based on a combination of elements disclosed in the prior art, there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant. The motivation suggestion or teaching may come explicitly from the statements in the prior art, the knowledge of one of ordinary skill art, or in some cases, the nature of the problem to be solved. See Dembiczak 50 USPQ at 1614 (Fed.Cir. 1999). In Kotzab, the CAFC held that even though various elements of the claimed invention were present (in two separate embodiments of the same prior art

reference), there was no motivation to combine the elements from the separate embodiments, based on the teachings in the prior art.

In order to establish a prima facie case of obviousness under 35 U.S.C. §103(a), the Examiner must provide particular findings as to why the two pieces of prior art are combinable. See Dembiczak 50 USPQ2d at 1617. Broad conclusory statements standing alone are not "evidence".

Goodson teaches an inverse translator that converts (or translates) frequency characteristics of a channel to the time domain, to produce a finite impulse response characteristic of the inverse frequency response of the channel (see column 6, line 66, to column 7, line 3). The inverse translator is used in the context of an approach to initializing coefficients for an equalizer, e.g., in a modem, in order to correct various types of channel distortion.

Macdonald discloses a modem only with respect to a discussion of types of insertion signals for the insertion unit 68 (column 7, lines 48-51), in the millimeter wave rebroadcasting unit shown in Figure 2. There is no evidence that one of ordinary skill would have been motivated to incorporate teachings of Goodson into Macdonald's receiver unit shown in Figure 3. Thus, in the context of the claimed invention, Goodson does not provide a teaching or suggestion for combining its device with that of Macdonald. Furthermore, even assuming that the references could be combined (which Applicants do not admit), they would still fail to teach the claim as a whole. As set forth in the claim, the combination fails to

teach or suggest changing the frequency arrangement of output signals of a broadcasting wave demodulation circuit. Accordingly, Applicants submit that the rejection fails to establish *prima facie* obviousness for claim 40.

**Claim Rejection – 35 USC 103; Macdonald, Ackermann, and Parlato**

Claims 19-25 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Macdonald, Ackermann, and Parlato. Applicants respectfully traverse this rejection.

The Office Action relies on Macdonald and Ackermann for teaching the claimed invention except for the claimed connection unit that is capable of at least one of rotation and bending. Instead the Office Action relies on Parlato for making up for the deficiency.

Macdonald and Ackermann were relied on for teaching the claimed connection unit recited in claim 12. Specifically, the Office Action alleged that Macdonald's Diplexer constitutes the claimed connection unit. Parlato teaches a flexible shaft for transmitting rotary motion, but does not appear to disclose a Diplexer capable of at least one of rotation and bending. Thus, Applicants disagree that one of ordinary skill would look to the teachings of Parlato in modifying Macdonald and Ackermann to arrive at the structure of the claimed invention. Therefore, Applicants

submit that at least for this additional reason, the rejection fails to establish *prima facie* obviousness.

Applicants respectfully request that the rejection be withdrawn.

#### **New Claim**

Claim 52 has been added to recite the resulting feature produced by the frequency arranging circuit that the radio frequency band of terrestrial waves is separated from local oscillated waves when up-converted in the millimeter wave transmission circuit. Applicants submit that Macdonald and Tanishima applied to claim 1, either alone or in combination fail to teach the feature recited in claim 52.

#### **CONCLUSION**

All objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance and such allowance is respectfully solicited. Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert W. Downs (Reg. No. 48,222), to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees

required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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